

ENERGY EFFICIENT SCHOOLS INITIATIVE

EESI

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Energy Efficient Schools Council

SECTION 4. (a) There is created the energy efficient schools council. The council shall consist of twelve (12) members including the Commissioner of Education, the Commissioner of Environment and Conservation, and the Commissioner of Economic and Community Development, or their designees, who shall serve as ex-officio members. The remaining members shall be appointed as follows:

(1) The governor shall appoint three (3) members as follows:

(A) One (1) member representing local governments who shall serve an initial term of two (2) years;

(B) One (1) member representing school systems who shall serve an initial term of three (3) years; and

(C) One (1) member representing the interests of the industries that provide natural gas and oil heating to school buildings.

(2) The Speaker of the Senate shall appoint three (3) members as follows:

(A) One (1) member from a list of three submitted by the board for licensing contractors as provided for in Title 62, Chapter 6, who shall serve an initial term of two (2) years.

(B) One (1) member representing local school systems in Tennessee who shall serve an initial term of three (3) years; and

(C) One (1) member representing the interests of the Oak Ridge National Laboratory after consultation with the Oak Ridge National Laboratory management who shall be an ex-officio, nonvoting member.

(3) The Speaker of the House of Representatives shall appoint three (3) members as follows:

(A) One (1) member from a list of three (3) submitted by the board of examiners for architects and engineers as provided for in Title 62, Chapter 2;

(B) One (1) member representing local governments in Tennessee who shall serve an initial term of three (3) years; and

(C) One (1) member representing the interests of the Tennessee Valley Authority, after consultation with the chief executive officer of the Tennessee Valley Authority, who shall be an ex-officio, non-voting member.

EESI COUNCIL MEMBERS

Ex-Officio Members

Tim Webb
Commissioner, Department of Education

Ryan Gooch
Energy Policy Director, Department of Economic and Community Development

Paul Sloan
Deputy Commissioner, Department of Environment and Conservation

Governor Appointed Members

Mayor Carolyn Bowers
Montgomery County

Representative Les Winningham
House District 38

Mike Gundersen
General Manager-Elk River Public Utility District

Speaker of the House Appointed Members:

Jim Keiffer-TVA-Vice President-Customer Strategy, Measurement and Support

Rick Thompson-President of ARTECH Design-Chattanooga, serves on the State Board of Examiners and Architects, member AIA

County Executive Jeff Huffman
Tipton County

Speaker of the Senate Appointed Members:

Billy Stair-Oak Ridge National Laboratory-Director of Communications and External Relations

Denny Hastings-Residential Contractor

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Technical Advisory Committee

(j) The council shall establish a technical advisory committee.

(1) The purpose of the technical advisory committee is as follows:

(A) Establish energy efficient design and technology guidelines for all K-12 school facilities, including, but not limited to, lighting and HVAC guidelines, as well as establishing criteria whereby projects that have been warranted for a pre-determined energy use shall be eligible;

(B) Establish methodology guidelines for post-audit verification of energy efficiencies achieved, if any, by qualifying capital outlay projects awarded by the council;

(C) Establish guidelines for commissioning verification controls to monitor on an ongoing basis the efficiency and effectiveness of qualifying capital outlay projects awarded by the council, including recommendations for utilization of energy managers where feasible; and

(D) Any additional duties required by the council in furtherance of their goals.

(2) The technical advisory committee shall be composed of five (5) members as follows:

(A) The council members representing the interests of the Oak Ridge National Laboratory and the Tennessee Valley Authority shall serve as ex-officio members and shall serve as cochairmen; and

(B) The council shall appoint the remaining five (5) members as follows:

(i) One (1) member shall have obtained a professional engineer certification, preferably with a background in mechanical engineering, but may be either active or retired;

(ii) Two (2) members shall have a background in sustainable building design, including, but not limited to, persons with LEED AP certification or background in Green Globes design and management;

(iii) One (1) member representing the Tennessee Valley Public Power Association; and

(iv) One (1) member shall have obtained a professional engineering certification and be experienced in performance based energy accountable construction processes.

Energy Efficient Schools Initiative Technical Advisory Committee

**Jim Keiffer Co-Chair
Tennessee Valley Authority
Vice President-Customer Strategy Measurement and Support**

**Patrick Hughes Co-Chair
Oak Ridge National Laboratory
Director of Building Technologies Research and Integration Center**

Lee Baker-Member representing Tennessee Valley Public Power Association

Terry Townsend-PE, LEED AP-President/Townsend Engineering

Kim Shinn-PE, LEED AP-Director of Sustainable Design/TLC Engineering for Architecture

James Hastings-Founding Principal & Architect-Hastings Architecture Associates

Bruce Fisackerly PE, GBE, CEM-Principal with Allen & Hoshell

PUBLIC CHAPTER 1188

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Council Purposes

(e) The purposes of the council are to:

- (1) Approve the design and technology guidelines as established by the technical advisory committee as provided in subsection (j);
- (2) Award grants or loans to school systems for qualifying capital outlay projects including projects where a provider has warranted predetermined energy use objectives under the criteria established by the technical advisory committee and approved by the council;
- (3) Cause to be conducted verification of energy efficiencies achieved using the methodologies established by the technical advisory committee as provided in subsection (j);
- (4) To the extent feasible, establish and support ongoing energy management programs; and
- (5) Establish compensation policies for members of the technical advisory committee unless otherwise prohibited in this chapter.

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U.S. Department Of Energy: *Guide to Operating and Maintaining EnergySmart Schools*

Energy Management.

The district must think pragmatically about the administrative and logistical details of the energy aspect of the O&M program, such as a budget. Unless the district uses a performance contractor, which can provide a dedicated staff, all programs will require the selection of an energy manager to provide leadership and handle day-to-day administrative duties.

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Loan and Grant Allocations

Loan Terms

Council approved a distribution of available grants and loans to school districts based on the 5th month ADM that includes GED+2.

The maximum amount of grants is set at \$22 per student.

The maximum loan amount is set at \$66 per student.

The loan terms approved by the Council are for a five-year maximum term at a simple interest rate of 3%.

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Lighting Best Practices

- Maintain interior illumination levels in accordance with current building design standards.
- Establish scheduled cleaning routes for lamps and luminaires.
- Replace discolored plastic diffusers in fluorescent fixtures. Prismatic lenses are generally the most efficient type for the degree of glare control provided; fresnel type lenses are the most efficient for recessed incandescent and high intensity discharge fixtures.
- Use light colored paints, carpets, tile, and upholstery.
- In areas with similar hours of operation, replace all lamps simultaneously to reduce labor costs. Consider replacing the lamps on a single switch at 70 to 80 percent of their average lamp life, if delayed much longer, lamps will start to burn out in a relatively short time, creating a maintenance problem, using additional energy, and providing insufficient illumination.
- Teach staff and students about energy conservation and how to use classroom lighting controls. Similarly, schools can install dimmers, timers, and sensors to have more control over when lights are turned on.

- Measure light levels in all areas. Use Illuminating Engineering Society of North America (IESNA) standards to evaluate existing light levels and delamp or make other operational changes.
- Switching from T12 to T8 lighting with electronic ballasts can reduce lighting energy by 20 to 30 percent. When making this replacement, a four tube T12 fixture can be replaced with a three tube T8 lamp and achieve the same illumination. In some instances, four T12 lamps can be replaced with two T8 lamps. Lighting measurements are key in making this determination.

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HVAC Best Practices

- Ensure systems run only during occupied periods
- Clean burners and air conditioner coils
- Replace and clean air filters and keep economizer dampers clean
- Check ducts for leaks at joints and flexible connections
- Check hot and cold duct and pipe insulation and seals for inadequate insulation
- Fix faulty equipment
- Verify and adjust refrigerant charge on packaged air conditioning systems
- Check, adjust, calibrate, and repair all controls, such as thermostat controllers and valve and damper operators

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Assistance

- Establish baseline energy data
- Develop an action plan for implementing energy efficiency
- Track energy use
- Monitor the effectiveness of energy efficiency strategies employed by the districts

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Additional Incentives

- Motors
- Drives
- Kitchen Equipment